**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

5      **Listing of Claims:**

Claim 1 (currently amended): An apparatus for calculating a TKIP Sbox value ~~required by the TKIP Sbox function described in the IEEE P802.11i specification~~, the apparatus comprising:

10            a first plurality of combinatorial logic <u>circuits</u> for calculating a TKIP Sbox left value according to a low part of an index value;

            a second plurality of combinatorial logic <u>circuits</u> for calculating a TKIP Sbox right value according to a high part of the index value; and

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            a third plurality of combinatorial logic <u>circuits</u> for calculating the TKIP Sbox value according to the TKIP Sbox left value and the TKIP Sbox right value.

Claim 2 (currently amended): The apparatus of claim 1, wherein the third plurality of

20            combinatorial logic <u>circuits</u> is a plurality of XOR gates.

Claim 3 (original):  The apparatus of claim 2, wherein the TKIP Sbox left value is XORed with the TKIP Sbox right value by the plurality of XOR gates and the output of the plurality of XOR gates forms the TKIP Sbox value.

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Claim 4 (currently amended): The apparatus of claim 1, wherein <u>each logic circuit in the first plurality of combinatorial logic circuits is for</u> ~~each bit in the TKIP Sbox left value, the first plurality of combinatorial logic comprises a logic circuit, each logic~~

~~circuit respectively~~ calculating a bit in the TKIP Sbox left value.

Claim 5 (currently amended): The apparatus of claim 1, wherein each logic circuit in the second plurality of combinatorial logic circuits is for ~~each bit in the TKIP Sbox right~~

5 ~~value, the second plurality of combinatorial logic comprises a logic circuit, each~~ ~~logic circuit respectively~~ calculating a bit in the TKIP Sbox right value.

Claim 6 (currently amended): A method for calculating a TKIP Sbox value ~~required by the~~ ~~TKIP Sbox function described in the IEEE P802.11i specification~~, the method

10 comprising the following steps:

calculating a TKIP Sbox left value according to a first part of an index value with combinatorial logic;

15 calculating a TKIP Sbox right value according to a second part of the index value with combinatorial logic; and

calculating the TKIP Sbox value according to the TKIP Sbox left value and the TKIP Sbox right value.

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Claim 7 (currently amended): The method of claim 6, wherein the step of calculating the TKIP Sbox value comprises:

performing an exclusive-or of the TKIP Sbox left value and the TKIP Sbox right

25 value to form the TKIP Sbox value.

Claim 8 (original): The method of claim 6, wherein the step of calculating the TKIP Sbox left value further comprising calculating each bit in the TKIP Sbox left value

according to the first part of an index value.

Claim 9 (original): The method of claim 6, wherein the step of calculating the TKIP Sbox right value further comprising calculating each bit in the TKIP Sbox right value

5          according to the second part of an index value.

Claim 10 (currently amended): An apparatus for calculating a TKIP Sbox value required by a TKIP Sbox function, the apparatus comprising:

10          a TKIP Sbox logic circuit configured to calculate a TKIP Sbox value according to an index value.

Claim 11 (currently amended): The apparatus of claim 10, wherein the TKIP Sbox logic circuit further comprises:

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a first plurality of combinatorial logic circuits for calculating a TKIP Sbox left value according to a first part of the index value;

a second plurality of combinatorial logic circuits for calculating a TKIP Sbox right

20          value according to a second part of the index value; and

a third plurality of combinatorial logic circuits for calculating the TKIP Sbox value according to the TKIP Sbox left value and the TKIP Sbox right value.

25    Claim 12 (currently amended): The apparatus of claim 11, wherein the third plurality of combinatorial logic circuits is a plurality of XOR gates.

Claim 13 (original): The apparatus of claim 12, wherein the TKIP Sbox left value is

XORed with the TKIP Sbox right value by the plurality of XOR gates and the output of the plurality of XOR gates forms the TKIP Sbox value.

Claim 14 (currently amended): The apparatus of claim 11, wherein each logic circuit in

5          the first plurality of combinatorial logic circuits is for each bit in the TKIP Sbox left value, the first plurality of combinatorial logic comprises a logic circuit, each logic circuit respectively calculating a bit in the TKIP Sbox left value.

Claim 15 (currently amended): The apparatus of claim 11, wherein each logic circuit in

10         the second plurality of combinatorial logic circuits is for each bit in the TKIP Sbox right value, the second plurality of combinatorial logic comprises a logic circuit, each logic circuit respectively calculating a bit in the TKIP Sbox right value.